



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|-----------------------|------------------|
| 10/686,861 | 10/17/2003 | Atsushi Tabata | 243717US3DIV | 1725 |
| 22850 | 7590 | 03/22/2005 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | BOTTORFF, CHRISTOPHER | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3618 | |

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/686,861

Applicant(s)

TABATA, ATSUSHI

Examiner

Christopher Bottorff

Art Unit

3618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-95 is/are pending in the application.
- 4a) Of the above claim(s) 20-27, 41-43 and 49-95 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 28-40 and 44 is/are rejected.
- 7) ☒ Claim(s) 45-48 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date g.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

The amendment filed December 23, 2004 was entered. Claim 95 is added. Claims 20-95 are pending. Claims 20-27, 41-43, and 49-94 were previously withdrawn as being directed to non-elected inventions and remain withdrawn. New claim 95 relates to the vehicle of Figure 38, which is not an elected species. Applicant elected the vehicle species of Figures 1-19 for examination in the reply filed June 24, 2004. Therefore, claim 95 is withdrawn as being directed to a non-elected species. Claims 28-40 and 44-48 are under consideration.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on February 22, 2005 was considered by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 28-34, 36, 37, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naito US 5,808,448 in view of JP 50-31516.

Naito discloses a vehicle having a motor 14, a fuel cell 1, a secondary battery 2, a regulation unit 12, and a control unit 10. See Figure 1. The vehicle further has a

Art Unit: 3618

remaining charge measurement unit 5, a high torque condition decision unit 30, an accelerator travel measurement unit (see column 3, lines 64-65, and column 4, lines 27-28), a required torque input unit (the accelerator itself), and auxiliary machinery 120a, 120b, 120c, linked with the motor (see column 7, lines 2-5). Naito does not disclose that the vehicle also has a heat engine.

However, JP 50-31516 teaches that the practice of providing a motor 2 and heat engine 1 in combination as two power sources in a system was old and well known in the art at the time the invention was made. See the English abstract. From the teaching of JP 50-31516, providing the system of Naito with a heat engine in addition to the motor would have been obvious to one of ordinary skill in the art at the time the invention was made. This would provide the system with an additional source of power having technology that is reliable and well established.

The additional limitations of the claims attempt to define the apparatus in terms of function and intended use. However, it is well settled that claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Danly*, 120 USPQ 528, 531 (CCPA 1959). “[A]pparatus claims cover what a device *is*, not what it *does*.” *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). (emphasis in original). Furthermore, claims containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all of the structural limitations of the claims. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

The vehicle produced from the combination of the teachings of Naito and JP 50-31516 includes all of the structural limitations of the claims. Moreover, the system of Naito, as modified by JP 50-31516, performs the claimed functions. Thus, the invention defined by the claims does not distinguish over the prior art.

Claims 35 and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naito US 5,808,448 in view of JP 50-31516 as applied to claim 28 above, and further in view of Kubo US 5,722,502.

Naito does not disclose a drive mode switch or a second motor, as defined in claims 35 and 38. However, Kubo teaches the desirability of providing a vehicle with a drive mode switch. See column 10, lines 14-20. Kubo also teaches the desirability of providing a vehicle with an engine with a second motor 30. See Figure 1. From the teachings of Kubo, providing the vehicle of Naito with a drive mode switch would have been obvious to one of ordinary skill in the art at the time the invention was made. This would allow an operator to select a drive mode that is suitable for desired driving conditions. From the further teachings of Kubo, providing the vehicle of Naito, as modified by JP 50-31516, with a second motor would have been obvious to one of ordinary skill in the art at the time the invention was made. This would help effectively start the engine.

Allowable Subject Matter

Claims 45-48 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. The prior art does not teach a power estimation unit in combination with the further limitations of the claims as defined in claim 45.

Response to Arguments

Applicant's arguments filed December 23, 2004 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine Naito and JP 50-31516, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the suggestion is found in JP 50-31516 as discussed in the rejection above.

The use of a fuel cell as the power supply in the system of JP 50-31516, rather than a secondary battery or a fuel cell and secondary battery combined, is not relevant to the teaching of a heat engine as a power source since there is no relationship suggested between the heat engine and the secondary battery in the cited combination, the cited references, or in the claims. The combination of Naito and JP 50-31516

Art Unit: 3618

involves adding a second power source, in the form of a heat engine, to the system of Naito. Neither Naito nor JP 50-31516 suggest that the presence of secondary battery 2 of Naito and a heat engine together would adversely affect such a system. Thus, the preference of JP 50-31516 to utilize a fuel cell as a power supply, rather than a secondary battery, would not undermine or teach away from the combination of a heat engine power source with the system of Naito.

Furthermore, Naito discloses a controller that controls the operation of a fuel cell, secondary battery, and motor. JP 50-31516 teaches that a controller controls the operation of the engine. Although neither Naito nor JP 50-31516 alone teach a controller that controls the operation of fuel cell and secondary battery power supplies and motor and heat engine power sources, both Naito and JP 50-31516 teach that the fuel cell, secondary battery, motor, and heat engine in the respective systems are controlled by a controller. Thus, controlling with a controller fuel cell and secondary battery power supplies and motor and heat engine power sources combined in a single system would have been obvious from Naito and JP 50-31516, as indicated in the rejection above.

In regard to claim 29, the system of Naito selects between the fuel cell and secondary battery as required for operating the motor. Column 5, lines 18-21, indicates that the secondary battery 2 is selected as the main power supply when large power is required for the motor. As long as unit 5 observes a sufficient charge remaining in secondary battery 2 and that secondary battery 2 is not in need of recharging (i.e.: not less than a predetermined level), secondary battery 2 will be used to drive the motor

and thereby satisfy claim 29. A continuous connection of the fuel cell and secondary battery to the motor is not relevant since claim 29 does not require only one power supply to operate during the claimed instance. Also, the motor of Naito is selected as the working power source for numerous specific driving states, which are set in advance (i.e.: during manufacturing). Moreover, selecting the appropriate power source between the heat engine and motor for a particular driving state is an obvious aspect of the cited combination of Naito and JP 50-31516.

In regard to claim 38, Applicant asserts that the second motor 30 of Kubo cannot provide a teaching for modifying Naito to include a second motor which drives auxiliary machinery when the engine is stopped since motor 30 is a starter motor. However, claim 38 does not require the second motor to drive auxiliary machinery when the engine is stopped. Rather, claim 38 requires the control unit to drive the second motor while the heat engine is stopped, and without regard to the auxiliary machinery. This requirement is consistent with a starter motor. While heat engine 28 of Kubo is stopped, control unit 20 will drive motor 30 in order to start heat engine 28.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Bottorff whose telephone number is (703) 308-2183. The examiner can normally be reached on Mon.-Fri. 7:30 a.m. - 4:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Ellis can be reached on (703) 308-2560. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Christopher Bottorff

